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# Special Reports : Rhizobium japonicum strains maintained in culture collections throughout the world

Soybean Genetics Newsletter

## IV. SPECIAL REPORTS

### *Rhizobium japonicum* Strains Maintained in Culture

### Collections throughout the World

[This listing of *Rhizobium japonicum* collections was obtained from the 'World Catalogue of *Rhizobium* Collections' edited by V.B.D. Skerman*(1983). While not a complete list of strains of *rhizobia* held in culture collections throughout the world, it is useful to rhizobiologists and others. *Rhizobium* species other than *japonicum* may be effective on *Glycine* species and are listed in the catalogue but are not included in this table.]

| Location | Head of the Collection | Curator of Collection | No. of Strains |
|---|---|---|---|
| 1. Instituto Agrotecnico<br>Facultad de Ciencias Agrarias<br>Universidad Nacional del Nordeste<br>Avenida Las Heras 727<br>Resistencia<br>ARGENTINA | A. M. Castany | A. M. Castany | 7 |
| 2. Division of Plant Industry<br>C.S.I.R.O.<br>P.O. Box 1600<br>Canberra City, A.C.T. 2601<br>AUSTRALIA | F. J. Bergersen | J. Brockwell | 2 |
| 3. Australian Inoculant Research and Control Service<br>Department of Agriculture<br>P.O. Box 720<br>Gosford, N.S.W. 2250<br>AUSTRALIA | R. J. Roughley | G. Bullard | 4 |
| 4. C.S.I.R.O.<br>Division of Tropical Agronomy<br>Cunningham Laboratory<br>Mill Road<br>St. Lucia 4067 Queensland<br>AUSTRALIA | R. A. Date | R. B. Panitz | 4 |
| 5. Faculte des Sciences Agronomiques de l'Etat<br>Chaire de Microbiologie<br>B-5800 Gembloux<br>BELGIUM | C. Bonnier | D. Cornet | 2 |
| 6. Empresa Brasileira de Pesquisa Agropecuaria<br>Servico Nacional de Levantamento e Conservacao de Solos<br>Programa Fixacao Biologica de Nitrogenio<br>kn47, 23460 Seropedica<br>Rio de Janeiro<br>BRAZIL | J. Bobereiner | A. A. Franco | 9 |

| Location | Head of the Collection | Curator of Collection | No. of Strains |
|---|---|---|---|
| 7. Microbiological Resources Center (MIRCEN)<br>Instituto de Pesquisas Agronomicas<br>Secretaria da Agricultura<br>Rua Goncalves Dias, 570<br>90.000 Porto Alegre, RS<br>BRAZIL | J. R. Jardim Freire | E. Brose | 4 |
| 8. National Agro-Industrial Union<br>N. Poushkarov Institute of Soil Science<br>Shosse Bankja Str. No. 5<br>Sofia<br>BULGARIA | L. Glogov | L. Raicheva | 29 |
| 9. Laboratory of Soil Microbiology<br>Institute of Soils and Fertilization<br>Chinese Academy of Agricultural Sciences<br>Beijing (81)<br>PEOPLE'S REPUBLIC OF CHINA | T. S. Hu | K. Z. Nin | 4 |
| 10. Laboratory of Soils and Fertilization<br>Institute of Oil Crops<br>Chinese Academy of Agricultural Sciences<br>Wuhan<br>PEOPLE'S REPUBLIC OF CHINA | P. C. Chou | --- | 1 |
| 11a. Department of Soil Microbiology<br>Research Institute of Crop Production<br>161 06 Praha 6-Ruzyne<br>CZECHOSLOVAKIA | H. Mareckova | M. Slepickova | 20 |
| 11b. Department of Bacteriology<br>State Laboratory for Soil and Crop Research<br>Lottenborgvej 24<br>DK-2800 Lyngby<br>DENMARK | T. V. Nissen | M. Schroder | 3 |
| 12. Laboratoire de Microbiologie del Sols<br>17, Rue Sully, B.V. 1540<br>21034 - Dijon Cedex<br>FRANCE | N. Amarger | M. Bours | 4 |

| Location | Head of the Collection | Curator of Collection | No. of Strains |
|---|---|---|---|
| 13. Sektion Biowissenschaften der Karl-Marx-Universitat 7010 Leipzig, Talstrasse 33 GERMAN DEMOCRATIC REPUBLIC | G. Schuster | G. Menzel | 1 |
| 14. National Institute for Agricultural Quality Testing Budapest, Keleti Karoly 24 HUNGARY | E. Bakondi-Zamory | --- | 2 |
| 15. Research Institute of Soil Science and Agricultural Chemistry Hungarian Academy of Sciences 1022 Budapest Hermann Otto es-15 HUNGARY | E. Manninger | --- | 1 |
| 16. PHYLAXIA Veterinary Biologicals and Feedstuffs 1486 Budapest, Szallas ul 5 HUNGARY | T. Soos | --- | 2 |
| 17. Department of Soil Science and Agricultural Chemistry J.N.A.U., P.B. No. 80 Krishinangar 482004 Jabalpur INDIA | J. N. Dube | U. K. Vashya<br>E. Joseph | 3 |
| 18. Biochemistry Division National Chemical Laboratory Pune 411 008 INDIA | S. R. Modak | | 2 |
| 19. Indian Agricultural Research Institute Division of Microbiology New Delhi 110012 INDIA | N. S. S. Rao | S. K. Kavimandam | 15 |
| 20. Rhizobium Collection Department of Soil Science Universiti Pertanian Malaysia Serdang Selangor MALAYSIA | Z. H. Shamsuddin | Z. H. Shamsuddin | 39 |
| 21. International Institute of Tropical Agriculture Oyo Road, PMB 5320 Ibadan NIGERIA | A. Ayanaba | K. Mulongoy | 43 |

| Location | Head of the Collection | Curator of Collection | No. of Strains |
|---|---|---|---|
| 22. Soil Biology Section<br>Soil Research Division<br>Alabang Central Soil Research Station<br>Alabang, Muntinlupa, Rizal<br>PHILIPPINES | F. M. Lapid<br>L. C. Francisco | N. Gonzales | 1 |
| 23. Department of Microbiology<br>Institute of Soil Science and Plant Cultivation<br>24-100 Pulawy<br>POLAND | W. Maliszewska | T. Wrobel | 3 |
| 24. Research Institute for Cereals and Technical Plants<br>Laboratory of Soil Biology<br>Boulevard Marasti 61, Bucharest<br>ROUMANIA | N. Balan | E. Galbenu | 10 |
| 25. Plant Protection Research Institute<br>Private Bag X134<br>Pretoria 0001<br>SOUTH AFRICA | B. W. Strijdom | C. J. Otto | 7 |
| 26. Thailand Institute of Scientific and Technological Research<br>196 Phahonyothin Road<br>Bangken, Bangkok 9<br>THAILAND | P. Atthasampunna | S. Chomchalow | 21 |
| 27. Rothamsted Collection of Rhizobium<br>Soil Microbiology Department<br>Rothamsted Experimental Station<br>Harpenden Hertfordshire<br>UNITED KINGDOM | J. E. Beringer | M. Dye | 11 |
| 28. USDA ARS<br>Rhizobium Collection<br>Beltsville, Maryland 20705<br>USA | D. F. Weber<br>H. H. Keyser | --- | 8 |
| 29. University of Hawaii<br>College of Tropical Agriculture and Human Resources<br>Department of Agronomy and Soil Science<br>NIFTAL Project<br>P.O. Box O Paia<br>Hawaii 96779<br>USA | A. S. Whitney | P. Somasegaran | 11 |

| Location | Head of the Collection | Curator of Collection | No. of Strains |
|---|---|---|---|
| 30. Institute of Microbiology<br>Armenian SSR Academy of Sciences<br>Abovian City 37850<br>Armenian SSR<br>USSR | A. D. Nalbandian | J. S. Melkonian | 2 |
| 31. Institute of Experimental Biology<br>Estonian SSR Academy of Sciences<br>203051 Harku sj., Harju rajoon<br>Estonian SSR<br>USSR | E. Parsim | E. Parsim<br>E. Lokk | 1 |
| 32. All-Union Scientific Research Institute of Agricultural Microbiology<br>Sh. Podbelskogo 3,<br>188620 Leningrad, Pushking<br>USSR | O. A. Berestetski | A. T. Novikova | 37 |
| 33. Laboratory of Microbiology<br>Ukrainian Scientific Research Institute of Agriculture<br>255205 Chabany, Kievskaya oblast<br>Ukrainian SSR<br>USSR | I. N. Romeiko | E. K. Dubovenko<br>S. M. Malinskaja<br>L. N. Chechelniskaja | 2 |
| 34. University of Can Tho<br>Tropical Biological Nitrogen Research Center<br>Hau Giang<br>VIETNAM | T. P. Duong | L. T. K. Nhan | 1 |
| 35. Laboratory of Microbiology<br>Faculty of Agriculture<br>71.000 Sarajevo<br>YUGOSLAVIA | V. J. Radulovic | M. Poplasen | 4 |

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Reid G. Palmer, USDA

## SOYBEAN GERMPLASM ADVISORY COMMITTEE

The Soybean Germplasm Advisory Committee was established to advise the soybean germplasm curators and others involved in soybean germplasm policy and administration. In an attempt to be responsive to the needs of the research community, the committee has been expanded to fourteen members. Five members are *ex officio*: The curators of the southern and northern portions of the soybean germplasm collection, the two USDA research geneticists working with the collection, and a representative of the USDA National Program Staff. The remaining nine members are elected for 3-year terms and represent the following geographic and/or research areas:

1. Private breeder, north
2. Private breeder, south
3. Public breeder, north
4. Public breeder, south
5. Pathologist or nematologist
6. Pathologist or nematologist
7. Entomologist
8. Physiologist or biochemist
9. Cytogeneticist or molecular geneticist

The following people are currently members of the committee: E. E. Hartwig, R. L. Bernard, T. C. Kilen, R. L. Nelson, P. A. Miller, C. W. Jennings, C. Williams, W. R. Fehr, K. Hinson, S. M. Lim, R. A. Kinloch, M. J. Sullivan, R. F. Wilson, and R. G. Palmer. R. L. Nelson is the current chairperson and T. C. Kilen is the vice-chairperson. Any comments regarding soybean germplasm in the U.S. would be welcomed by any member of the committee.

The committee met on February 13, at St. Louis, Missouri. Four major items were on the agenda.

A report was given on the status of the germplasm evaluation and enhancement proposals submitted by the committee to the USDA in March 1983. It was intended that these proposals would compete with proposals from other commodities for funding in FY 85. However, it now seems highly unlikely that money will be available for such a project. The committee is concerned about the lack of support for germplasm research and voted to express this concern to appropriate individuals.

Reports were given of the status of both the northern and southern portions of the USDA Soybean Germplasm Collection. A detailed germplasm report is given elsewhere in this volume and will not be covered in this report.

The committee considered a request from the USDA Plant Exploration and Taxonomy Laboratory to assess the needs for soybean germplasm exploration. The exploration priorities recommended by the International Board of Plant Genetic Resources (IBPGR) Working Group on the Genetic Resources of *Glycine* species were reviewed. Through funding from IBPGR, a project is currently underway to create a directory of soybean germplasm collections worldwide. The final recommendations from the committee will wait until this directory has been completed.

Soybean germplasm exchange with the People's Republic of China was discussed. Frustration was expressed at the failure to achieve major soybean germplasm exchanges, although we continue to receive some new accessions each year. The committee will be working to increase germplasm exchange between the two countries.

--R. L. Nelson

# U.S. SOYBEAN GERMPLASM COLLECTION REPORT

Listed below are the new additions to the Germplasm Collection grown at Urbana, Illinois, in 1983:

| Country of Origin | Second year | New |
|---|---|---|
| China | 155 | 2 |
| Sweden | 2 | |
| USSR | | 10 |
| S. Korea | | 3 |

The second year additions bring the Urbana Collection to the following totals:

| Maturity Group | Old varieties | FC strains | PI strains | Total |
|---|---|---|---|---|
| 000 | 3 | 1 | 89 | 93 |
| 00 | 5 | 4 | 327 | 336 |
| 0 | 7 | 6 | 819 | 832 |
| I | 23 | 3 | 1108 | 1134 |
| II | 26 | 6 | 1177 | 1209 |
| III | 38 | 13 | 1074 | 1125 |
| IV | 38 | 18 | 2302 | 2358 |
| Total | 140 | 51 | 6896 | 7087 |

The total number of accessions at Urbana by country of origin is as follows:

| Origin | 1980 & earlier | Entered since 1980 | Total | Percentage |
|---|---|---|---|---|
| China | 1072 | 197 | 1269 | 17.9 |
| Japan | 1068 | 4 | 1072 | 15.1 |
| Korea | 1827 | 219 | 2046 | 28.9 |
| Other Asian | 17 | - | 17 | .2 |
| USSR | 1803 | - | 1803 | 25.5 |
| Europe | 759 | 2 | 761 | 10.7 |
| Other | 119 | - | 119 | 1.7 |
| | 6665 | 422 | 7087 | 100.0 |

A new checklist by entry and maturity group was recently prepared and is available from the curator.

A Soybean Germplasm Collection Inventory covering all maturity groups and all accessions received through 1980 has been prepared and has been submitted for review prior to publication. This should be especially convenient for those using PI strains in their research and wishing to identify the country of origin and variety name.

A survey is being made of the status of current soybean germplasm collections worldwide. Over 180 individuals in 80 countries were sent a questionnaire requesting information on the location, type, number of accessions, storage facilities, and seed availability of their germplasm collection. Responses are now being compiled and a complete directory will be available in late 1984.

The second year of agronomic evaluations was completed for approximately 600 accessions in maturity group 0 or earlier and over 800 accessions in groups I, III, and IV. A test of over 450 group II accessions was lost due to adverse weather conditions and will be repeated in 1984. Since 1980, approximately 4,500 accessions in maturity groups IV and earlier have been evaluated with the help of Dr. J. W. Lambert, University of Minnesota, and Dr. J. H. Orf, University of Kentucky and University of Minnesota. Publications containing this information are currently being prepared.

R. L. Bernard
G. A. Juvik
R. L. Nelson